

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
27 January 2005 (27.01.2005)

PCT

(10) International Publication Number
WO 2005/007637 A1

(51) International Patent Classification⁷: **C07D 295/02**

(21) International Application Number:
PCT/US2004/021370

(22) International Filing Date: 2 July 2004 (02.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0315774.0 4 July 2003 (04.07.2003) GB

(71) Applicant (for all designated States except US): **SUN CHEMICAL CORPORATION** [US/US]; 222 Bridge Plaza South, Fort Lee, NJ 07024 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **HERLIHY, Shaun, Lawrence** [GB/GB]; 6 Fagus Close, Walderslade Woods, Chatham, Kent ME3 9DD (GB). **ROWETT, Brian** [GB/GB]; 16 Keswick Drive, Maidstone, Kent ME16 0DQ (GB). **DAVIDSON, Robert, Stephen** [GB/GB]; Trafford Lodge, 496 Uppingham Road, Leicester LE5 2GG (GB).

(74) Agent: **PERSLEY, Sidney**; 222 Bridge Plaza South, Fort Lee, NJ 07024 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

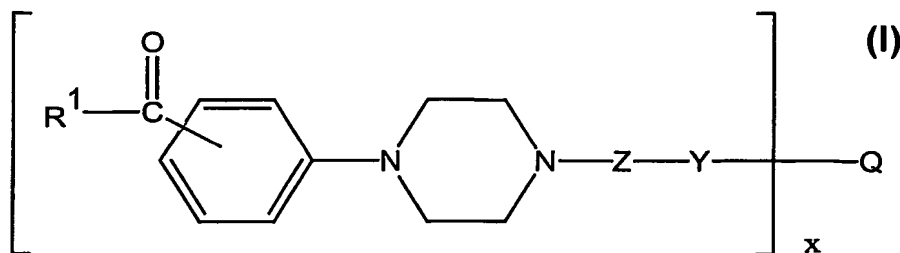
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PIPERAZINE-BASED SENSITISERS



(57) Abstract: Compounds of formula (I) {where: R¹ is methyl, ethyl, cycloalkyl or optionally substituted aryl; Z is arylene or a group of formula -(CHR⁴)_n-, where R⁴ is hydrogen, hydroxy or alkyl, and n is a number from 0 to 6; Y is carbonyl or a -CH₂- group; Q is a residue of a mono- or poly- hydroxy compound having from 1 to 6 hydroxy groups; and x is a number from 1 to 6; and esters thereof} are useful as sensitisers for use in radiationcurable compositions.

WO 2005/007637 A1